

TECHNICAL EXHIBIT
DTV MAXIMIZATION APPLICATION
STATION KFCT(DT)
FORT COLLINS, COLORADO
CH 21 890 KW 397 M

Technical Narrative

This Technical Exhibit supports an application for digital television (DTV) station KFCT(DT) for its "maximized" DTV operation at Fort Collins, Colorado. This application requests a construction permit (CP) for KFCT(DT) digital television operation on channel 21 at Fort Collins with a non-directional effective radiated power of 890 kilowatts.

Proposed Facilities

Station KFCT(DT) proposes to operate DTV channel 21 from a site West of Fort Collins. The antenna height above average terrain for the channel 21 DTV operation will be 397 meters. The proposed KFCT(DT) effective radiated power exceeds the Commission's *Appendix B* allocated maximum effective radiated power in some azimuthal directions for KFCT(DT).¹ Therefore, an allocation study was completed to ensure no prohibited interference would occur.

¹ See Seventh Report And Order And Eighth Further Notice Of Proposed Rule Making in the Matter of Advanced Television Systems and their Impact Upon the Existing Television Broadcast Service, MB Docket 87-268, Released August 6, 2007; Adopted August 1, 2007.

The proposed DTV transmitter site location coordinates (NAD 27) are:

40° 37' 03" North Latitude
105° 19' 39" West Longitude

A sketch of antenna and pertinent elevations are included as Figure 1.

Figure 2 is a map showing the proposed DTV predicted coverage contour and the associated DTV appendix B Noise-Limited coverage contour. The extent of the contours have been calculated using the normal FCC prediction method.

Population Served

The herein proposed KFCT(DT) "maximized" facility is predicted to serve 2,304,659 persons, post-transition based upon the 2000 Census. KFCT(DT)'s associated Appendix B facility is predicted to serve 620,000 persons. Therefore, the herein proposed KFCT(DT) facility would serve more than 100% of KFCT(DT)'s Appendix B population. The OET-69 studies were conducted using a cell size of 2.0 km/side and distance increments for Longley-Rice analysis of 0.5 km.

Table Mountain

The herein proposed facility is located nearby to the Table Mountain radio quiet zone. If necessary, coordination with Table Mountain is requested.

Allocation Considerations

The proposed KFCT(DT) Channel 21 facility meets the requirements of Section 73.623 of the FCC Rules concerning predicted interference to other Appendix B DTV allotments. Longley-Rice interference analyses were conducted pursuant to the requirements of the FCC Rules; OET Bulletin No. 69; and published FCC guidelines for preparation of such interference analyses. The Longley-Rice interference analyses were conducted using the software developed by du Treil, Lundin & Rackley, Inc. based on the FCC published software routines.² Stations selected for analysis were determined pursuant to the distance requirements outlined in the FCC DTV Processing Guidelines Public Notice. The results of the interference analyses for the proposed KFCT(DT) facility are summarized herein at Figure 3. As indicated therein, the proposed facility will meet the 0.5% criterion outlined in the FCC Rules and published guidelines with respect to all considered stations.³

Radiofrequency Electromagnetic Field Exposure

The proposed KFCT(DT) facilities will be evaluated in terms of potential radiofrequency electromagnetic field exposure at ground level to workers and the general public by RFR measurements.

2 The duTreil, Lundin & Rackley, Inc. DTV interference analysis program is based on the program and procedures outlined by the FCC in the Sixth Report and Order; subsequent Memorandum Opinion and Order; and FCC OET Bulletin No. 69. A nominal grid size resolution of 2 km was employed.

3 Interference analysis results reflect the net change in interference to a given station considering the interference predicted to occur from all other stations (i.e. "masking") including the allotment facility for KFCT(DT). This properly reflects the net interference change for determining compliance with the FCC 0.5% *de minimis* standard.

Access to the transmitting site is restricted and appropriately marked with warning signs. As this is a multi-user site an agreement between the stations will control access. In the event that workers or other authorized personnel enter restricted areas or climb the tower, appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down. The proposed KFCT(DT) operation appears to be otherwise categorically excluded from environmental processing.

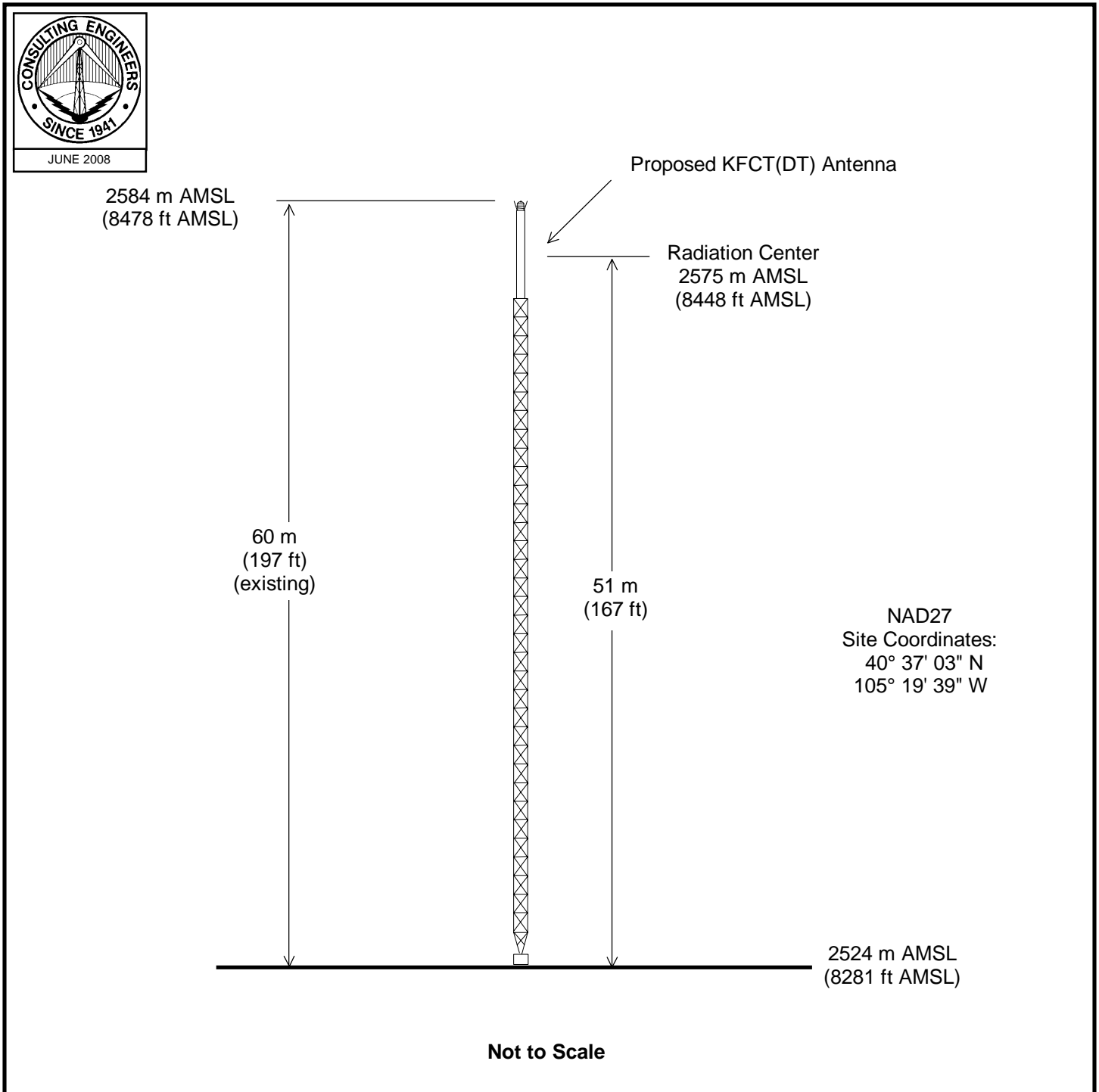
It is noted that this statement only addresses the potential for radiofrequency electromagnetic field exposure. All other aspects of the environmental processing analysis will be or already have been provided to the FCC by the tower owner.

Charles Cooper

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Figure 1

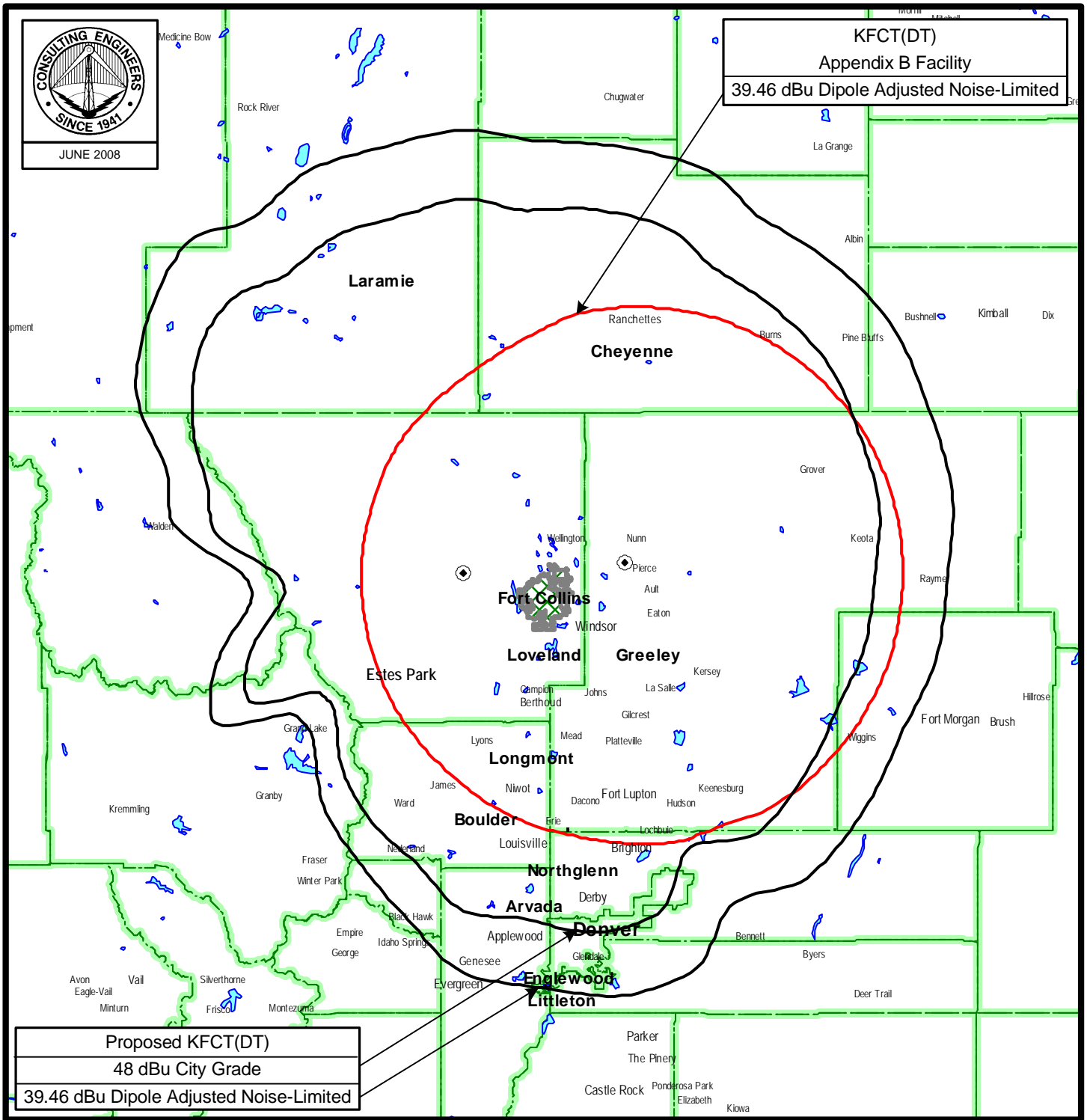


ANTENNA AND SUPPORTING STRUCTURE

DTV STATION KFCT(DT)
FORT COLLINS, COLORADO
CH 21 890 KW 397 M

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

Figure 2



PREDICTED COVERAGE CONTOURS

DTV STATION KFCT(DT)
FORT COLLINS, COLORADO
CH 21 890 KW 397 M

du Treil, Lundin & Rackley, Inc Sarasota, Florida

Figure 3

TW Census data selected 2000
Post Transition Data Base Selected /export/home/cdbb/pt_tvdb.sff

TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 06-17-2008 Time: 13:50:03

Record Selected for Analysis

KFCT USERRECORD-01 FORT COLLINS CO US
Channel 21 ERP 890. kW HAAT 409. m RCAMSL 02575 m
Latitude 040-37-03 Longitude 0105-19-39
Status APP Zone 2 Border
Last update Cutoff date Docket
Comments
Applicant

Cell Size for Service Analysis 2.0 km/side

Distance Increments for Longley-Rice Analysis 0.50 km

Facility does not meet maximum height/power limits
Channel 21 ERP = 890.00 HAAT = 409.

Azimuth (Deg)	ERP (kW)	HAAT (m)	41.0 dBu F(50,90) (km)
0.0	890.000	512.1	114.2
45.0	890.000	627.9	120.9
90.0	890.000	705.3	125.0
135.0	890.000	564.7	117.5
180.0	890.000	373.5	102.7
225.0	890.000	33.0	58.0
270.0	890.000	33.0	58.0
315.0	890.000	430.7	107.7

Evaluation toward Class A Stations

No Spacing violations or contour overlap to Class A stations

Class A Evaluation Complete

SPACING VIOLATION FOUND BETWEEN STATION

KFCT 21 FORT COLLINS CO USERRECORD01

Figure 3

and station

SHORT TO: KTVD 20 DENVER CO BLCT 19881219KP
039-40-18 0105-13-12
Req. separation => 12.0 <= 106.0 Actual separation 105.4 Short 0.6(93.4) km

SHORT TO: KTVD 20 DENVER CO BPCT 20020813ABA
039-43-50 0105-13-53
Req. separation => 12.0 <= 106.0 Actual separation 98.8 Short 7.2(86.8) km

SHORT TO: KXRM-TV 21 COLORADO SPRINGS CO BLCT 19981109KH
038-44-43 0104-51-40
Req. separation 244.6 Actual separation 211.7 Short 32.9 km

SHORT TO: KFCT 21 FORT COLLINS CO DTVPLN DTV0754
40 -38-32 104 -49-05
Req. separation 223.7 Actual separation 43.2 Short 180.5 km

SHORT TO: KFCT 21 FORT COLLINS CO BPCDT 20080313ACW
040-38-32 0104-49- 5
Req. separation 223.7 Actual separation 43.2 Short 180.5 km

SHORT TO: KFCT 22 FORT COLLINS CO BLCT 19950628KF
040-38-32 0104-49- 5
Req. separation => 12.0 <= 106.0 Actual separation 43.2 Short 62.8(31.2) km

SHORT TO: KDEN 25 LONGMONT CO BLCT 19970428KE
040-05-47 0104-54- 4
Req. separation => 24.1 <= 96.6 Actual separation 68.3 Short 28.3(44.2) km

SHORT TO: KDEN 25 LONGMONT CO BPCT 20040524AOH
040-05-57 0104-53-48
Req. separation => 24.1 <= 96.6 Actual separation 68.2 Short 28.4(44.1) km

LANDMOBILE SPACING VIOLATIONS FOUND

NONE

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quiet zone

Proposed facility OK toward Table Mountain

Proposed facility is beyond the Canadian coordination distance

Figure 3

Proposed facility is beyond the Mexican coordination distance
Proposed station is OK toward AM broadcast stations

Start of Interference Analysis

Channel	Call	Proposed Station City/State	ARN
21	KFCT	FORT COLLINS CO	USERRECORD01

Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
21	KNBN	RAPID CITY SD	422.3	CP	BPCDT -20080215AJT
21	KNBN	RAPID CITY SD	422.3	PLN	DTVPLN -DTVP0783
22	KXRM-TV	COLORADO SPRINGS CO	211.9	LIC	BLCDT -20030702ABE
22	KXRM-TV	COLORADO SPRINGS CO	211.9	PLN	DTVPLN -DTVP0795

Analysis of Interference to Affected Station 1

Channel	Call	City/State	Application Ref. No.
21	KNBN	RAPID CITY SD	BPCDT -20080215AJT

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
21	KFCT	FORT COLLINS CO	404.6	PLN	DTVPLN -DTVP0754
21	KFCT	FORT COLLINS CO	422.3	APP	USERRECORD-01

Proposed station is beyond the site to
nearest cell evaluation distance

Analysis of Interference to Affected Station 2

Channel	Call	City/State	Application Ref. No.
21	KNBN	RAPID CITY SD	DTVPLN -DTVP0783

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
21	KFCT	FORT COLLINS CO	404.6	PLN	DTVPLN -DTVP0754
21	KFCT	FORT COLLINS CO	422.3	APP	USERRECORD-01

Proposed station is beyond the site to

Figure 3

nearest cell evaluation distance

Analysis of Interference to Affected Station 3

Channel	Call	City/State	Application Ref. No.
22	KXRM-TV	COLORADO SPRINGS CO	BLCDT -20030702ABE

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
21	KFCT	FORT COLLINS CO	210.9	PLN	DTVPLN -DTVP0754
22	KTFQ-TV	ALBUQUERQUE NM	405.7	CP	BPCDT -20080328AIS
22	KTFQ-TV	ALBUQUERQUE NM	405.7	PLN	DTVPLN -DTVP0817
23	KREG-TV	GLENWOOD SPRINGS CO	228.9	CP MOD	BMPCDT -20060201BJU
23	KREG-TV	GLENWOOD SPRINGS CO	228.9	PLN	DTVPLN -DTVP0836
21	KFCT	FORT COLLINS CO	211.9	APP	USERRECORD-01

Proposed station is beyond the site to
nearest cell evaluation distance

Analysis of Interference to Affected Station 4

Channel	Call	City/State	Application Ref. No.
22	KXRM-TV	COLORADO SPRINGS CO	DTVPLN -DTVP0795

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
21	KFCT	FORT COLLINS CO	210.9	PLN	DTVPLN -DTVP0754
22	KTFQ-TV	ALBUQUERQUE NM	405.7	CP	BPCDT -20080328AIS
22	KTFQ-TV	ALBUQUERQUE NM	405.7	PLN	DTVPLN -DTVP0817
23	KREG-TV	GLENWOOD SPRINGS CO	228.9	CP MOD	BMPCDT -20060201BJU
23	KREG-TV	GLENWOOD SPRINGS CO	228.9	PLN	DTVPLN -DTVP0836
21	KFCT	FORT COLLINS CO	211.9	APP	USERRECORD-01

Proposed station is beyond the site to
nearest cell evaluation distance

Analysis of Interference to Affected Station 5

Channel	Call	City/State	Application Ref. No.
21	KFCT	FORT COLLINS CO	USERRECORD-01

Figure 3

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
21	KNBN	RAPID CITY SD	422.3	CP	BPCDT	-20080215AJT
21	KNBN	RAPID CITY SD	422.3	PLN	DTVPLN	-DTVP0783
22	KXRM-TV	COLORADO SPRINGS CO	211.9	LIC	BLCDT	-20030702ABE
22	KXRM-TV	COLORADO SPRINGS CO	211.9	PLN	DTVPLN	-DTVP0795

Total scenarios = 1

Result key: 1

Scenario 1 Affected station 5

Before Analysis

Results for: 21A CO FORT COLLINS USERRECORD01 APP

HAAT 409.0 m, ATV ERP 890.0 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	2333685	36161.7
not affected by terrain losses	2304659	33101.2
lost to NTSC IX	0	0.0
lost to additional IX by ATV	0	0.0
lost to ATV IX only	0	0.0
lost to all IX	0	0.0

Potential Interfering Stations Included in above Scenario 1

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